Pearson BTEC Level 3 Nationals Certificate, Extended Certificate, Foundation Diploma, Diploma, Extended Diploma

Tuesday 14 January 2025

Afternoon (Time: 3 hours)

Paper reference **31761H**

Information Technology

UNIT 2: Creating Systems to Manage Information

Part A

You must have:
activity2.rtf, activity3.rtf, activity4.rtf

Instructions

- **Part A** and **Part B** contain the material for the completion of the assessment under supervised conditions.
- There are 40 marks for **Part A** and 26 marks for **Part B**, giving a total mark for the assessment of 66.
- **Part A** and **Part B** are specific to each series and this material must be issued only to learners who have been entered to take the assessment in the specified series.
- Learners **must only** have access to **Part A** during this examination session.
- This booklet should be kept securely until the start of the 3-hour supervised assessment period.
- **Part B** materials **must not** be accessed during the completion of **Part A**.
- **Part A** and **Part B** should be submitted together for each learner.
- This booklet should not be returned to Pearson.
- Answer **all** activities.

Information

- The total mark for this paper is 40.

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Instructions to Invigilators

This paper must be read in conjunction with the unit information in the specification and the *BTEC Instructions for Conducting External Assessments (ICEA)* document. See the Pearson website for details.

Refer carefully to the instructions in this booklet and the *BTEC Instructions for Conducting External Assessments (ICEA)* document to ensure that the assessment is supervised correctly.

The 3-hour **Part A** activities must be carried out under examination conditions.

Electronic templates for Activities 2, 3 and 4 are available on the website for centres to download for learner use.

Learners must complete **Part A** on a computer using the templates provided and appropriate software. All work must be saved as PDF documents for submission.

Invigilators may clarify the wording that appears in **Part A** but cannot provide any guidance in completion of the activities.

Invigilators should note that they are responsible for maintaining security and for reporting issues to Pearson.

Maintaining security

- Learners must not bring anything into the examination environment or take anything out.
- Centres are responsible for putting in place appropriate checks to ensure that only permitted material is introduced into the examination environment.
- Internet access **is not** permitted.
- Learners' work must be regularly backed up. Learners should save their work to their folder using the naming instructions indicated in each activity.
- During any permitted break, and at the end of the examination, materials must be kept securely, and no items removed from the supervised environment.
- Learners can only access their work under supervision.
- User areas must only be accessible during the examination session and only by the individual learners.
- Any materials being used by learners must be collected in at the end of the examination.
- Following completion of **Part A**, all materials must be retained securely for submission to Pearson.
- **Part B** materials must not be accessed during the completion of **Part A**.

Outcomes for submission

Each learner must create a folder to submit their work.

The folder should be named according to this naming convention:

[Centre #]_[Registration number #]_[surname]_[first letter of first name]_PartA

Example: Joshua Smith with registration number F180542 at centre 12345 would have a folder titled

12345_F180542_Smith_J_PartA

Each learner will need to submit 6 PDF documents **and** their final database within their folder.

The 6 PDF documents should use these file names:

Activity 1: activity1_[Registration number #]_[surname]_[first letter of first name]
Activity 2: activity2_[Registration number #]_[surname]_[first letter of first name]
Activity 3: activity3_[Registration number #]_[surname]_[first letter of first name]
Activity 3d: activity3d_[Registration number #]_[surname]_[first letter of first name]
Activity 4: activity4_[Registration number #]_[surname]_[first letter of first name]
Activity 5: activity5_[Registration number #]_[surname]_[first letter of first name]

Instructions for Learners

Read the scenario, brief and activities information carefully.

Plan your time carefully to allow for the preparation and completion of all the activities.

Internet access is **not** allowed.

You will complete the activities under supervision and your work will be kept securely at all times.

You must work independently throughout the examination and must not share your work with other learners.

Your invigilator may clarify the wording that appears in **Part A** but cannot provide any guidance in completion of the activities.

Part B materials **must not** be accessed during the completion of **Part A**.

Outcomes for submission

You must create a folder to submit your work.

The folder should be named according to this naming convention:

[Centre #]_[Registration number #]_[surname]_[first letter of first name]_PartA

Example: Joshua Smith with registration number F180542 at centre 12345 would have a folder titled

12345_F180542_Smith_J_PartA

You will need to submit 6 PDF documents **and** your final database within this folder.

The 6 PDF documents should use these file names:

Activity 1: activity1_[Registration number #]_[surname]_[first letter of first name]
Activity 2: activity2_[Registration number #]_[surname]_[first letter of first name]
Activity 3: activity3_[Registration number #]_[surname]_[first letter of first name]
Activity 3d: activity3d_[Registration number #]_[surname]_[first letter of first name]
Activity 4: activity4_[Registration number #]_[surname]_[first letter of first name]
Activity 5: activity5_[Registration number #]_[surname]_[first letter of first name]

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Part A Brief

You are advised to spend 10 minutes reading the scenario and the activities you are to complete.

You may make notes and/or highlight information to use in the completion of the documents you need to produce for your activities.

Scenario

You have been asked to create a database for Lowry Castle Entertainment.

Lowry Castle Entertainment owns Lowry Castle, a spectacular venue where clients can hold parties and stay overnight.

The database will record information about the parties.

The castle has three party rooms of different sizes.

Each party room has a maximum capacity of guests it can hold.

Each party is for a client, in a particular party room and run by a party manager.

Each party is given at least one bedroom free of charge and no more than three.

An extract of the data the company would like to record is shown in **Figure 1**.

Party ID	Client Surname	Party Date	Manager ID	Number Free Bedrooms	Room Name	Client ID	Room ID	Party Size	Manager First Name	Client Address	Client Postcode	Room Capacity
1	Mitchell	10/10/2024	3	1	Cosy Corner	1	1	28	Pauline	352 Cornwall Avenue	QJ2 7YN	30
2	Gilbert	31/12/2024	1	3	The Lords Hall	2	3	55	Mariya	126 Vane Avenue	MW6 6KZ	75
3	Fields	04/01/2025	3	1	The Durham	3	2	40	Pauline	314 Clifton Street	BV5 1OA	40
4	Mitchell	11/01/2025	2	2	Cosy Corner	1	1	28	Aranos	352 Cornwall Avenue	QJ2 7YN	30
5	Ferguson	11/01/2025	3	2	The Durham	4	2	35	Pauline	94 Deans Avenue	FQ4 2PH	40
6	Wallace	11/01/2025	1	3	The Lords Hall	5	3	68	Mariya	142 Viaduct Street	DA0 8SD	75
7	Spencer	18/01/2025	3	2	The Lords Hall	6	3	39	Pauline	75 Broughton Row	AE5 9OA	75
8	Medina	25/01/2025	2	1	The Durham	7	2	38	Aranos	112 Hillview	DV0 6QF	40
9	Cooper	25/01/2025	1	2	The Lords Hall	8	3	75	Mariya	114 Albert Avenue	MF3 5MC	75

Figure 1

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Part A

You must complete ALL activities within Part A.

Produce your documents using a computer.

Save your documents in your folder ready for submission using the formats and naming conventions indicated.

Activity 1: Database Relationships Screenprint (45 minutes)

Study the data extract provided in **Figure 1**.

Create an efficient database structure that:

- minimises data duplication
- accepts the data provided
- uses recognised naming conventions
- ensures data integrity.

Ensure you use **all** and **only** the fields shown in **Figure 1**.

Screen print your database relationships.

Save your database relationships screenprint as a PDF in your folder for submission as **activity1_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 45 minutes on this activity.

(Total for Activity 1 = 8 marks)

Activity 2: Table Structures and Validation (45 minutes)

Create efficient table structures based on Activity 1 and the data shown in **Figure 1**.

The table structures must use suitable validation to meet these requirements:

- a record for a new client will not save if the clients surname is not present
- a record for a new client will not save if the clients postcode is not in the correct format
- a record for a new party will not save if the manager ID is invalid
- a record for a new party will not save if the room ID is invalid
- a record will not save if the number of bedrooms given free of charge is below the accepted range
- a record will not save if the number of bedrooms given free of charge is above the accepted range.

Input the data given in **Figure 1** into your relational database.

Evidence your table structures and validation as screenprints using the given **activity2.rtf** template.

Display your screenprints to show:

- the design view of each table showing the structure, including the fields and data types
- validation including one suitable example for each of these:
  - presence check
  - length check
  - value lookup **or** range check
  - table lookup
  - format check.

Save your evidence of the table structures as a PDF in your folder for submission as **activity2_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 45 minutes on this activity.

(Total for Activity 2 = 8 marks)

Activity 3: Queries and Report (40 minutes)

Queries

(a) Create a query to display a sorted list of parties from latest party date to earliest party date. The party manager must be Pauline and the party size at least 35. The query must display, in this order, the party date, the client ID, the number of bedrooms given free of charge and the party size.

(b) £90 revenue is lost each time a bedroom is given free of charge.

Create a query to display information about parties held in The Lords Hall in 2025 where the revenue lost is more than £90.

Calculate the revenue lost.

Display the:

- room name
- party date
- number of free bedrooms given
- revenue lost.

Evidence your queries as screenprints using the given **activity3.rtf** template.

Your screenprints must show:

- the **DESIGN** view of the queries specified that you have created, including fields and criteria
- the **DATASHEET** view of the queries specified that you have created.

Report

(c) A room should not be booked if the party size is less than 75% of the room capacity. If the party size is less than 75% of the room capacity, then an under-occupancy alert is needed.

Create a report that shows party bookings for rooms.

For each room, calculate:

- the difference between the room capacity and the party size
- 75% of the room capacity
- whether an under-occupancy alert is needed.

Display:

- a suitable report title
- the room name
- the party date
- the room capacity
- the party size
- the difference between the room capacity and the party size
- 75% of the room capacity
- the words **"Under Occupancy"** if the party size is less than 75% of the room capacity
- the total number of parties overall.

The report must fit on one page.

Evidence your report as screenprints using the given **activity3.rtf** template.

Your screenprints must show:

- the **DESIGN** view of the report you have created, including grouping and calculations
- the **DESIGN** view of any queries you have created and used with the report, including fields and criteria
- the **DATASHEET** view of any queries you have created and used with the report.

Save your query and report evidence as a PDF in your folder for submission as **activity3_[Registration number #]_[surname]_[first letter of first name]**

(d) Save your database report (not a screenprint) as a PDF in your folder for submission as **activity3d_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 40 minutes on this activity.

(Total for Activity 3 = 12 marks)

Activity 4: Structure Testing (20 minutes)

Test the structure and the validation of your relational database using suitable test data (normal, erroneous and extreme as appropriate).

You must provide evidence of table level testing that proves:

1. a record for a new client will not save if the clients surname is not present
2. a record for a new client will not save if the clients postcode is not in the correct format
3. a record for a new party will not save if the manager ID is invalid
4. a record for a new party will not save if the room ID is invalid
5. a record will not save if the number of bedrooms given free of charge is below the accepted range
6. a record will not save if the number of bedrooms given free of charge is above the accepted range.

Complete the test log to show how you have tested the structure and validation of your database using the given **activity4.rtf** template.

Save your test log as a PDF in your folder for submission as
activity4_[Registration number #]_[surname]_[first letter of first name]

You are advised to spend 20 minutes on this activity.

(Total for Activity 4 = 6 marks)

Activity 5: Structure Evaluation (20 minutes)

Evaluate your database structure and validation.

You should consider:

- how well your database structure has minimised data duplication
- how well your database structure meets these requirements:
  - the castle has three party rooms of different sizes
  - each party room has a maximum capacity of guests it can hold
  - each party is for a client, in a particular party room and run by a party manager
  - each party is given at least one bedroom free of charge and no more than three.

Save your evaluation as a PDF in your folder for submission as
activity5_[Registration number #]_[surname]_[first letter of first name]

You are advised to spend 20 minutes on this activity.

(Total for Activity 5 = 6 marks)

TOTAL FOR PART A = 40 MARKS